AMENDMENTS TO THE CLAIMS

The claims as listed below will replace all prior listings and presentations of claims in the above-identified application.

Please cancel Claims 11-24 and add new Claims 25-38 as follows:

1.   **(Original)** A method for high-speed precise dispensing of microfluidic quantities of a reagent onto or into a target, comprising:

       providing a dispenser adapted to form droplets of said reagent;

       providing a positive displacement pump in fluid communication with said dispenser for metering precise quantities of said reagent to said dispenser;

       providing a controller for controlling and coordinating the volume of said reagent dispensed at predetermined locations on or in said target; and

       creating a user-defined text file containing lists of white space delimited numbers defining a dispense pattern that is to be formed on or in said target, said text file being accessible by said controller through a software program such that rapid and accurate dispensing is performed.

2.   **(Original)** The method of Claim 1, further comprising aspirating said reagent from a receptacle prior to dispensing of said reagent.

3.   **(Original)**   The method of Claim 1, wherein said software program has programmed into it a preset droplet dispense volume which cumulatively determines the total volume dispensed at each of said locations.

4.   **(Original)** The method of Claim 1, wherein said dispenser comprises a solenoid valve adapted to be opened and closed at a predetermined frequency.

5.   **(Original)** The method of Claim 4, wherein said valve is operated at a frequency such that its operation is mechanically modulated so that it remains open in oscillation to facilitate ejection of a predetermined volume of said reagent.

6.   **(Original)** The method of Claim 5, wherein said predetermined volume is in the range from about 1 nL to about 100 nL.

7.   **(Original)**   The method of Claim 5, wherein said predetermined volume is dispensed in the form of multiple droplets of variable size.

8. **(Original)** The method of Claim 1, wherein said text file is created by a transformation of data using spreadsheet formulas.

9. **(Original)** The method of Claim 1, wherein said white space comprises a tab.

10. **(Original)** The method of Claim 1, wherein said white space comprises a carriage return.

11. **(Canceled)**.

12. **(Canceled)**.

13. **(Canceled)**.

14. **(Canceled)**.

15. **(Canceled)**.

16. **(Canceled)**.

17. **(Canceled)**.

18. **(Canceled)**.

19. **(Canceled)**.

20. **(Canceled)**.

21. **(Canceled)**.

22. **(Canceled)**.

23. **(Canceled)**.

24. **(Canceled)**.

25. **(New)** The method of Claim 1, wherein said text file comprises spatial and dispense volume data for said reagent, and said method further comprises accessing said text file through said software program to send instructions to said controller to perform (1) positively displacing said reagent by actuating said positive displacement pump, (2) ejecting a predetermined volume of said reagent in the form of a droplet by actuating said dispenser, (3) selecting between repeating steps (1), (2) and providing relative motion between said dispenser and said target, and (4) repeating steps (1), (2) and (3) until desired volumes of said reagent have been dispensed at predetermined location sites on or in said target.

26. **(New)** The method of Claim 25, wherein said dispenser comprises a plurality of dispense channels in fluid communication with said positive displacement pump and said text file further contains data identifying each dispense channel, and said method further comprises

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selectively actuating said dispenser so that each of said dispense channels dispenses a predetermined volume of said reagent until said desired volumes of said reagent have been dispensed at said predetermined location sites on or in said target, thereby providing rapid dispensing of said reagent at multiple sites.

27.   **(New)** The method of Claim 25, wherein said dispenser comprises a plurality of dispense channels in respective fluid communication with a plurality of positive displacement pumps and said text file further contains data identifying each dispense channel and pump arrangement, and said method further comprises selectively actuating said dispenser and said pumps so that each of said dispense channels dispenses a predetermined volume of said reagent until said desired volumes of said reagent have been dispensed at said predetermined location sites on or in said target, thereby providing rapid dispensing of said reagent at multiple sites.

28.   **(New)** The method of Claim 27, wherein at least one of said dispense channel and pump arrangement is used to dispense said reagent and at least one of said dispense channel and pump arrangement is used to dispense a different reagent and said text file further contains data identifying a particular reagent with a particular dispense channel pump arrangement, and said method further comprises selectively actuating said dispenser and said pumps so that each of said dispense channels dispenses a predetermined volume of a corresponding one of said reagents until desired combinatorial volumetric ratios of said reagents have been dispensed at predetermined location sites on or in said target.

29.   **(New)** The method of Claim 28, wherein said text file further comprises data identifying at least one at least one reagent and its source location, and said method further comprises reagent aspiration once said dispense pattern has been formed on or in said target.

30.   **(New)** The method of Claim 1, wherein said droplets have a volume in the range from about 0.1 nanoliters to about 1000 nanoliters.

31.   **(New)** The method of Claim 1, wherein said dispenser comprises a dispense head which comprises an (M x N) array of spaced dispense channels where M and N are positive integers, and said text file contains indexed dispense channel data and reagent pattern data of dispense volume and dispense location, and said method further comprises accessing said text file through said software program to send instructions to said controller to perform dispense functions and provide relative motion between said dispense head and said target to form said

dispense pattern which comprises predetermined combinatorial permutations of different reagents and/or volume ratios at predetermined location sites on said target.

32.   (New)   The method of Claim 31, wherein said method further comprises providing said relative motion in at least two substantially perpendicular directions.

33.   (New)   The method of Claim 32, wherein said method further comprises performing dispense functions to dispense different reagents from at least some of said dispense channels.

34.   (New)   The method of Claim 33, wherein performing dispense functions further comprises dispensing a total volume of a particular reagent in the form of at least two droplets of lesser volume at least some of said location sites on said target.

35.   (New)   The method of Claim 34, wherein said target comprises a microtiter plate with a plurality of wells.

36.   (New)   The method of Claim 35, wherein M = 1-40, N = 1-96, and said method comprises a series of motions which places the individual dispense channels over the individual wells for dispensing of each reagent volume.

37.   (New)   The method of Claim 36, wherein M = 1-8 and N = 1-12.

38.   (New)   The method of Claim 34, wherein said target is selected from a group consisting of one or more microtiter plates, glass slides, receptive membranes, and porous surfaces.